What is claimed is:

1. An error correction method adding an inner parity of e bytes and an outer parity of f bytes to an error correction block having a size of n bytes (in a row direction) x m bytes (in a column direction), the error correction method comprising:

obtaining a plurality of inner parity blocks (PI blocks) by segmenting the error correction block in an inner parity (PI) direction into x segments (here, x is an integer equal to or greater than 2);

generating e-byte PI for each of the plurality of PI blocks generated by segmenting, and adding the PIs in the PI direction; and

generating f-byte outer parity (PO) in a PO direction of the error correction block having PIs, and adding the POs in the PO direction.

2. The error correction method of claim 1, wherein the PIs are Reed-Solomon signs and satisfy $(n/x) + e \geq 256$.

3. The error correction method of claim 2, wherein $(n+e)$ x $(m+f)$ is less than or equal to 64K.

4. The error correction method of claim 3, wherein n is 688 and m is 96.

5. The error correction method of claim 4, wherein x is 172 and e is 8.

6. The error correction method of claim 5, wherein f is 12.

7. The error correction method of claim 1, further comprising:

interleaving a plurality of data groups and the plurality of PIs in the PI direction in the error correction blocks having PIs and POs.

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8.   The error correction method of claim 7, wherein the interleaving further comprises:

gathering bytes having the same order in each of the data groups; and

allocating the gathered bytes sequentially according to their order.

9.   The error correction method of claim 8, wherein the reallocating is performed in the PI groups in a single data row.

10.   The error correction method of claim 7, wherein the reallocating further comprises reallocating a plurality of PIs (PI0, PI1, ..., PIn/x) by gathering bytes having a same order in bytes included in each of the plurality of Pis, thereby forming reallocated Pis groups.

11.   The error correction method of claim 10, wherein the reallocating is performed in the PIs in a single data row.

12.   The error correction method of claim 10, further comprising:

moving and allocating the reallocated PIs between the reallocated PIs groups.

13.   The error correction method of claim 11, further comprising:

interleaving the POs in the PO direction.

14.   The error correction method of claim 13, wherein the PO direction interleaving further comprises:

obtaining an n x f byte bit stream by lining up the f-byte POs sequentially, and forming a divided PO by dividing the bit stream into each {(n x f)/m}; and

moving and allocating the divided PO in the PO direction in each row.

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15.   The error correction method of claim 4, wherein n x m is a basic address unit recorded on a disk, the method further comprising:

forming a data frame with a 4-byte ID, a 2-byte IED, an 18-byte RSV, two 2-KB user data blocks, and two 4-byte EDCs.

16.   The error correction method of claim 1, further comprising determining f, which is a number of PO direction parities, and x, which is a number of PI direction segments, are decided so that a result of multiplication of x with f can be divided by o, which is a number of data frames in one error correction block, without remainder, and a recording frame is formable even when f is not equal to o.

17.   The error correction method of claim 16, wherein a GF (28) operation in a Galois Field can be performed.

18.   The error correction method of claim 8, wherein the reallocating is performed in the PI groups in a plurality of data rows.

19.   An error correction method directed to an error correction block having data an inner parity direction and an outer parity direction, comprising:

segmenting the error correction block in the inner parity direction to form a plurality of inner parity segments.

20.   The error correction method of claim 19, further comprising:

generating an e-byte inner parity for each of the plurality of inner parity segments; and

adding the e-byte inner parities to form a plurality of inner parity blocks.

21.   The error correction method of claim 20, further comprising:

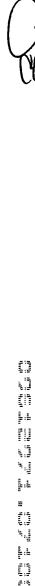generating an f-byte outer parity; and

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3   adding the f-byte outer parities in the outer parity direction.

1   22.   The error correction method of claim 21, further comprising adding the
2   e-byte inner parities to the inner parity segments in the inner parity direction.

1   23.   The error correction method of claim 22, further comprising interleaving
2   the data after adding the e-byte parities to the inner parity segments.

1   24. The error correction method of claim 23, wherein the interleaving of the
2   data comprises interleaving in the inner parity direction.

1   25. The error correction method of claim 24; wherein the interleaving of the
2   data in the inner parity direction comprises interleaving the data within the inner parity
3   blocks.

1   26.   The error correction method of claim 25, wherein the interleaving of the
2   data in the inner parity direction comprises interleaving four inner parity blocks one by
3   one in a predetermined turn.

1   27. The error correction method of claim 26, wherein the interleaving of the
2   data comprises interleaving the data in the outer parity direction.

1   28.   The error correction method of claim 27, wherein the interleaving of the
2   data comprises interleaving a quantity of the data in relation to the size of a burst error.

29.   An optical disk comprising:
an error correction block, comprising:
a plurality of inner parity blocks, each said inner parity block comprising
an e-byte inner parity in an inner parity direction; and

a plurality of f-byte outer parities in an outer parity direction.

1   30.   The optical disk of claim 29, further comprising a plurality of data

2   groups interleaved with the inner parity blocks.

1   31.   The optical disk of claim 30, wherein the plurality of f-byte outer parities

2   are interleaved in the outer parity direction.

1   32.   The optical disk of claim 31, wherein the optical disk is a digital

2   versatile disk (DVD).

1   33.   The optical disk of claim 32, wherein the digital versatile disk is a high

2   density digital versatile disk (HD-DVD).

1   34.   The optical disk of claim 33, wherein the high density digital versatile

2   disk has a storage capacity of at least 15 GB.